



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,369	01/22/2004	Kristy A. Campbell	M4065.0988/P988-A	3423
24998	7590	06/24/2005	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP			TRAN, LONG K	
2101 L Street, NW			ART UNIT	
Washington, DC 20037			PAPER NUMBER	

2818

DATE MAILED: 06/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/761,369

Applicant(s)

CAMPBELL, KRISTY A.

Examiner

Long K. Tran

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 28-38 is/are pending in the application.
- 4a) Of the above claim(s) 28-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/22/04, 2/13/04, 3/18/04</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Response to Preliminary Amendment

1. This office action is in response to Preliminary Amendment filed on January 22, 2004:
2. Claims **14 – 27** and **39 – 45** have been cancelled.

Election/Restrictions

Claims **1 – 13** and **28 – 38** are pending in this application.

3. Restriction to one of the following inventions is required under 35 U.S.C. 121:

Group I. Claims **1 – 13**, drawn to a semiconductor device, classified in class **257**, subclass **154**.

Group II. Claims **28 – 38**, drawn to process of making a semiconductor device, classified in class **438**, subclass **20**.

4. The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of following can be shown: (1) that the process as claimed can be use to make other and materially different product or by hand, or (2) that process as claimed can be made by another and materially different process. (MPEP § 806.05(f)). In the instance case unpatentabilities of the group I invention would not necessarily imply unpatentability of the group II invention, since the device of the group I invention could be made by the processes materially different from those of the group II invention, for example, such as forming an integrated circuit in claim 28 in reverse order.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, the fields of search are not co-extensive. Therefore, separate examination would be required and restriction for examination purposes as indicated is proper.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventor-ship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventor-ship must be accompanied by a diligently filed petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(h).

Per telephone conversation with Mr. Ryan H. Flax on June 17, 2005, the applicant elects group I, claims 1 – 13 without traverse.

Claims 1 – 13 are presented for examination.

Information Disclosure Statement

7. This office acknowledges of the following items from the Applicant:

Information Disclosure Statement (IDS) filed on January 22, 2004; on February 13, 2004 and March 18, 2004.

The references cited on the PTO -1449 form have been considered.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

Art Unit: 2818

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims **1 – 13** are rejected under 35 U. S. C. § 102 (e) as being anticipated by Kozicki et al (U. S. Patent Application No. 2002/0168820).

10. Regarding claim **1**, Kozicki discloses a memory cell, as shown in figures 1, 2, 11 comprising:

- a first electrode 130 deposited on a substrate body 110;

- a second electrode 120, where the first electrode 130 and the second electrode 120 provide access to the memory cell;

- a first layer 155/255 of a silver chalcogenide disposed between the first electrode 130 and the second electrode 120, where the first layer 155/255 forms a first portion of a memory cell body; and

- a second layer of a chalcogenide glass 140 that forms a second portion of the memory cell body, where the second layer 140 is also disposed between the first electrode 130 and the second electrode 120, where the chalcogenide glass 140 permits a conductive pathway to form between the first electrode 130 and the second electrode 120 in response to an electric potential applied between the first electrode 130 and the second electrode 120. See also paragraphs [0036], [0040], [0043], [0046]-[0049], and [0053]-[00541].

Regarding claim **2**, Kozicki discloses the memory cell wherein the first layer of the silver chalcogenide 255 is formed directly on the first electrode 130. See figure 2.

Regarding claim **3**, Kozicki discloses the memory cell wherein the second layer of the chalcogenide glass is formed directly on the first electrode 130. See figure 1.

Regarding claim **4**, Kozicki discloses the memory cell wherein the silver chalcogenide comprises silver selenide. See paragraphs [0043], [0046]-[0049].

Regarding claim **5**, Kozicki discloses the memory cell wherein the silver chalcogenide comprises silver sulfide. See paragraphs [0043], [0046]-[0049].

Regarding claim **6**, Kozicki discloses the memory cell wherein the silver chalcogenide comprises silver telluride. See paragraphs [0043], [0046]-[0049].

Regarding claim **7**, Kozicki discloses the memory cell wherein the silver chalcogenide comprises silver oxide. See paragraphs [0043], [0046]-[0049].

Regarding claim **8**, Kozicki discloses the memory cell where the chalcogenide glass comprises germanium selenide. See paragraphs [0053]-[0055].

Regarding claim **9**, Kozicki discloses the memory cell wherein the chalcogenide glass comprises arsenic selenide. See paragraphs [0053]-[0055].

Regarding claim **10**, Kozicki discloses the memory cell wherein the chalcogenide glass comprises germanium sulfide. See paragraphs [0053]-[0055].

Regarding claim **11**, Kozicki discloses the memory cell wherein the chalcogenide glass is selected from the group of chalcogenide glasses that comprises selenium, can be doped with silver, and can remain an amorphous material after the doping with silver. See paragraphs [0053]-[0055].

Regarding claim **12**, Kozicki discloses the memory cell further comprising a third layer of a silver that forms a third portion of the memory cell body, where the third layer, the second layer, and the third layer are arranged such that the second layer of

chalcogenide glass is disposed between the first layer of the silver chalcogenide and the third layer of silver. See paragraph [0054].

Regarding claim **13**, Kozicki discloses the memory cell wherein at least one of the first electrode and the second electrode comprises tungsten. See paragraph [0040].

Continued Examination Under 37 CFR 1.114

11. All claims are drawn to the same invention claimed in the application (no. 10/100450; claims 1 – 13 have been rejected once in the Office Action on July 22, 2003) prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Long K. Tran whose telephone number is 571-272-1797. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Long Tran



June 17, 2005



David Nelms
Supervisory Patent Examiner
Technology Center 2800